

(No Model.)

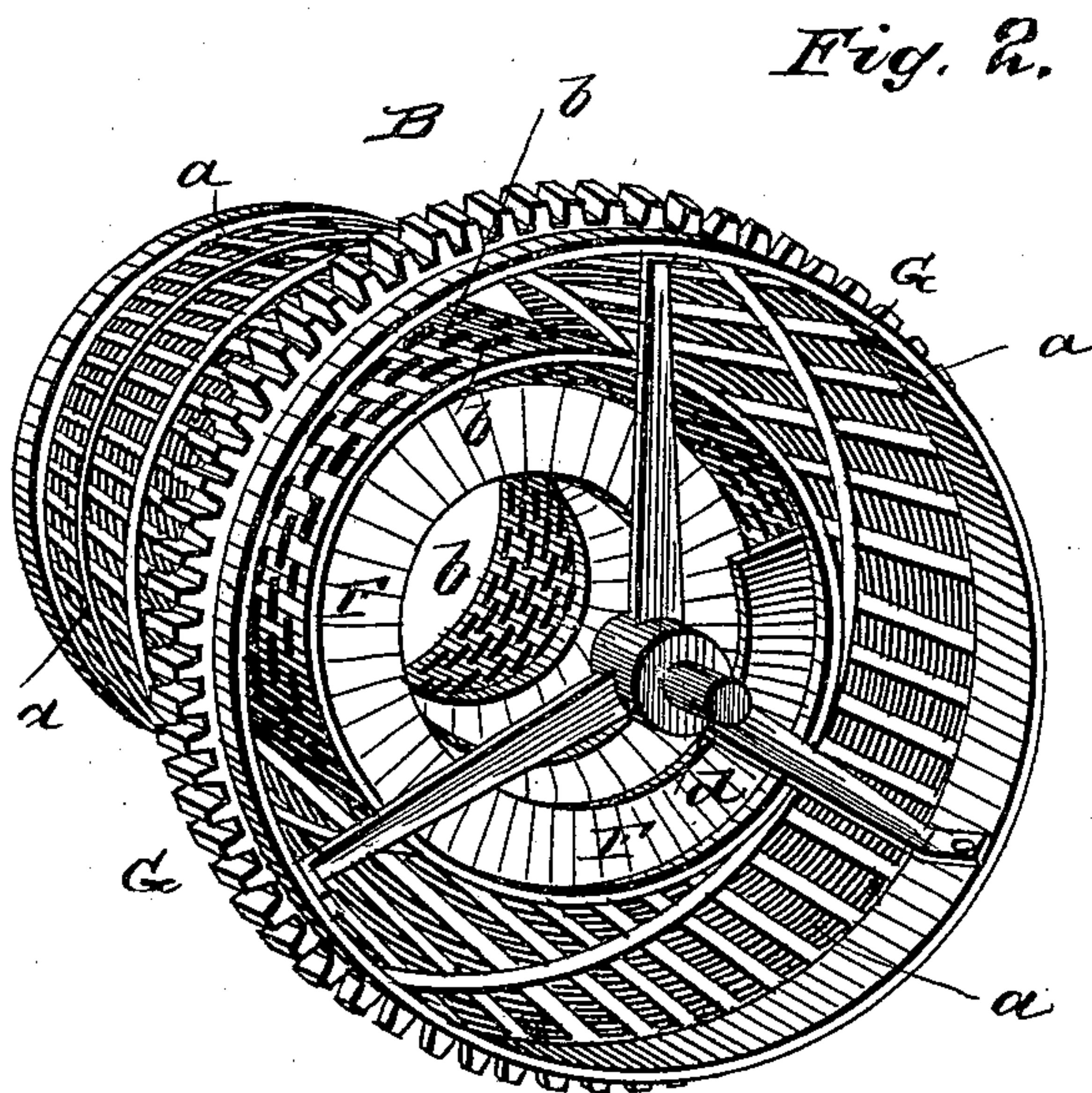
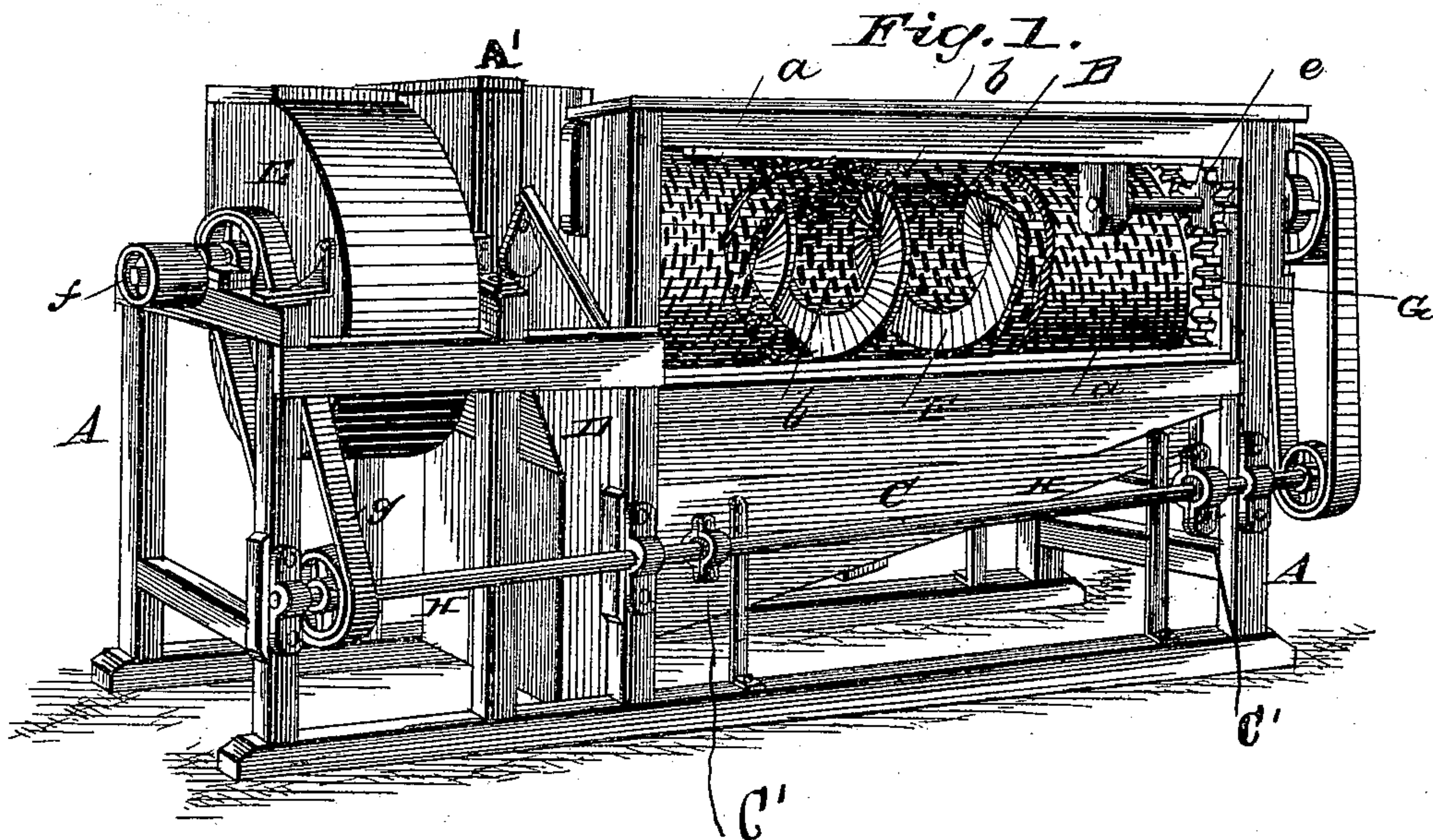
2 Sheets—Sheet 1.

J. S. LEAS & J. B. CORNWALL.

SEPARATOR FOR SHELLED CORN, &c.

No. 300,715.

Patented June 17, 1884.



WITNESSES

Phil C. Dietrich.
W. R. Keyworth.

INVENTORS.

Silas Leas.
John B. Cornwall
by *W. Alexander* Attorney

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Fig. 3.

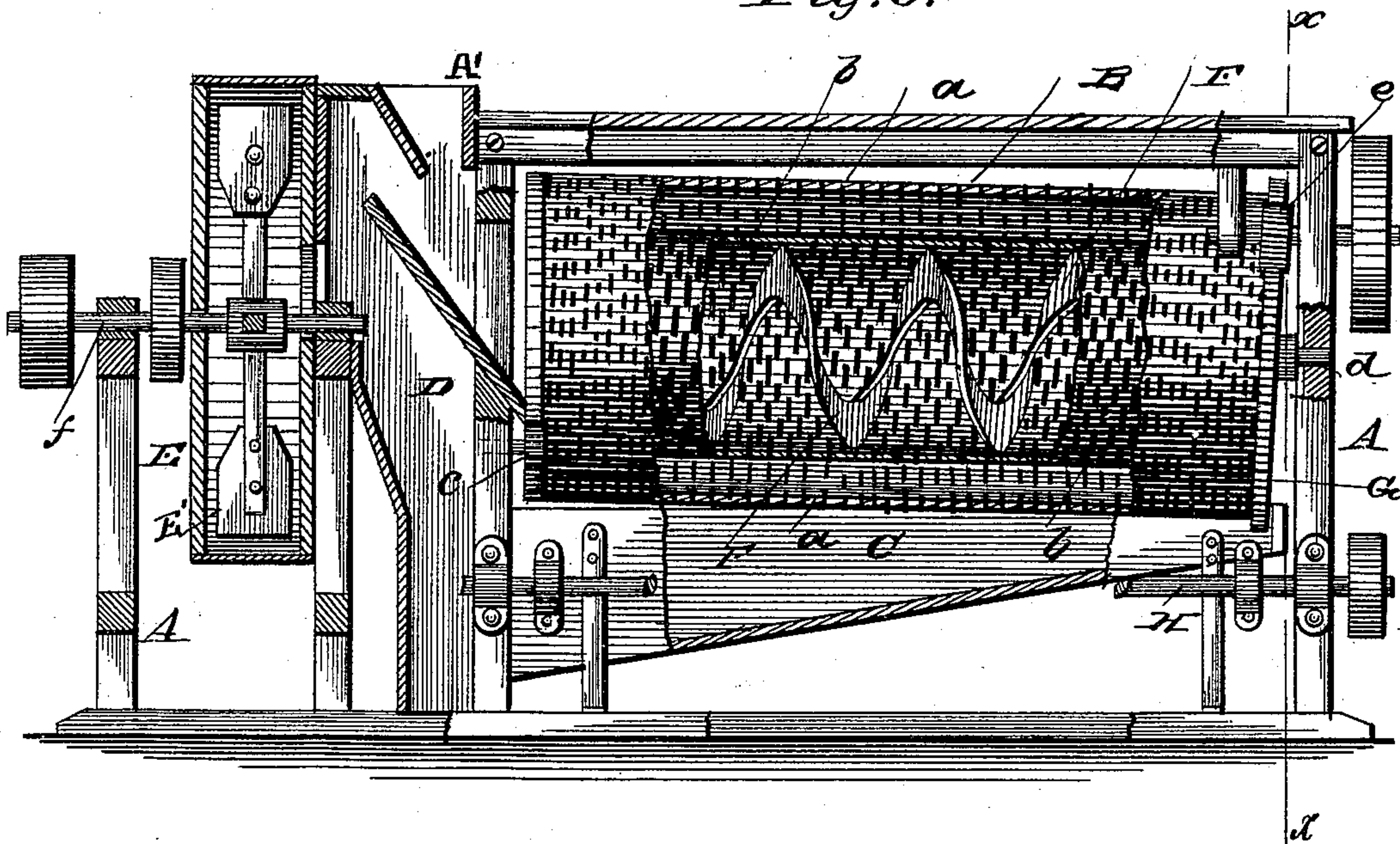
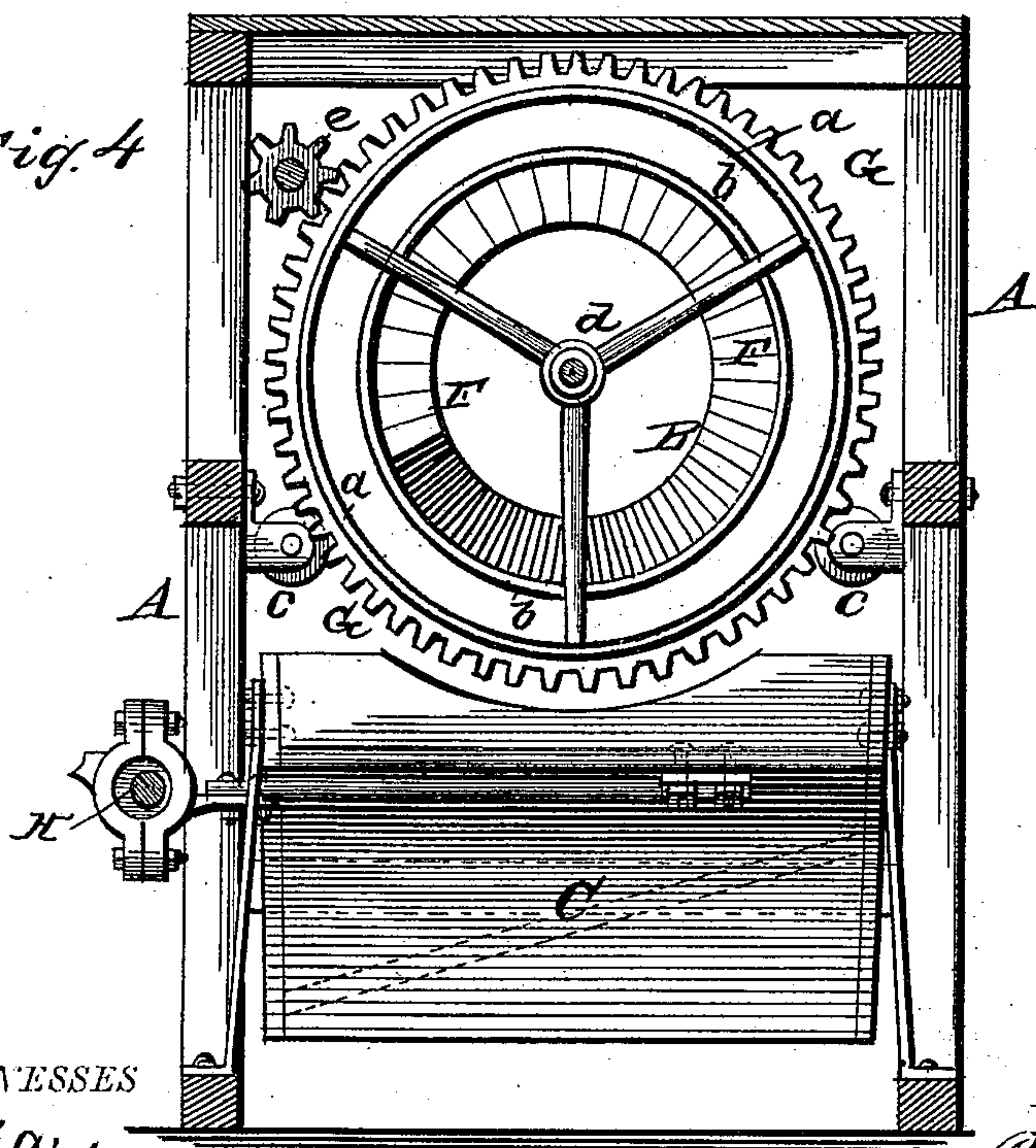


Fig. 4



WITNESSES

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UNITED STATES PATENT OFFICE.

J. SILAS LEAS, OF ROCK ISLAND, AND JOHN B. CORNWALL, OF SOUTH MO-
LINE, ASSIGNORS TO THE BARNARD & LEAS MANUFACTURING COMPANY,
OF MOLINE, ILLINOIS.

SEPARATOR FOR SHELLLED CORN, &c.

SPECIFICATION forming part of Letters Patent No. 300,715, dated June 17, 1884.

Application filed February 7, 1884. (No model.)

To all whom it may concern:

Be it known that we, J. SILAS LEAS, of Rock Island, county of Rock Island, and State of Illinois, and JOHN B. CORNWALL, of South Mo-
line, in the county of Rock Island and State of Illinois, have invented certain new and useful
Improvements in Separators for Shelled Corn, &c.; and we do hereby declare that the follow-
ing is a full, clear, and exact description there-
of, reference being had to the accompanying
drawings, and to the letters of reference marked
thereon, which form part of this specification,
in which—

Figure 1 is a perspective view of our im-
proved rotary separator, showing portions of
the external and internal cylinders broken
away, and also showing a portion of the con-
veyer or worm. Fig. 2 is a perspective view
of the two cylinders and worm, looking from
the driving end thereof. Fig. 3 is a partly-
sectional view taken vertically and longitudi-
nally through the center of the machine. Fig.
4 is a cross-section through line *xx* of Fig.
3, indicating the anti-friction roller-bearings
at one end of the outer cylinder.

The object of our invention is to thoroughly
separate cobs, sticks, silk, and other foreign
substances from shelled corn, and thus clean
the corn for market; and it consists, essen-
tially, in a rotary cylindrical separator having
an external perforated cylinder, an internal
perforated cylinder, and a worm or conveyer
inside of the latter, as will be fully understood
from the following description, when taken in
connection with the annexed drawings.

A designates the frame of the machine, which
is adapted to contain and support our improved
rotary separator B. Beneath this separator
is a shaking-shoe, C, operated by eccentrics C'
on the shaft H, which receives the grains
of corn and small pieces of cobs and conducts
them down to the lower end of a separating
wind-trunk, D, which is in communication
with a case, E, containing a fan, E'.

The separator B consists of an outer cylin-
der or drum, *a*, which is numerously perfo-
rated to allow grains of corn and small pieces
of cobs to pass through it. Inside of this cyl-
inder *a* is another cylinder or drum, *b*, of

smaller diameter, which is perforated with
holes of larger size than those through the outer
cylinder, and which is concentrically arranged
therein, so as to leave an annular space of suf-
ficient size to allow the grain to flow freely in
it. Inside of the inner cylinder is applied a
worm or conveyer, F. In practice we prefer
not to have a central shaft through the separa-
tor, as such a shaft would in a measure inter-
fere with a free passage of the cobs through the
cylinder *b*. We therefore support the separa-
tor on rollers *c*, applied at each end of it, or by
rollers at one end and a gudgeon, *d*, journaled
at the other end. The gudgeon *d* is formed
on a spider secured to the cylinders *a* *b*.

G designates a gear which is secured to one
end of the cylinder *a*, which engages a pinion
spur-wheel, *e*, on the shaft of which is a pulley
driven from a pulley on a shaft, H, by means
of a belt, as shown in Fig. 1. The shaft H
receives rotation from a pulley on the fan-
shaft *f* by means of a belt, *g*.

The operation of our separator is as follows:
The corn and cobs are fed into one end of the
inner cylinder through a hopper, A', and pass
through a strong blast of air, which removes
the sticks, chaff, and other very light matters.
The worm-conveyer F moves the cobs toward
the rear end of the separator and discharges
them as fast as they are fed to its lower end,
thus preventing them from accumulating and
clogging the cylinder *b*. The shelled corn falls
directly through the cylinder *b* upon the cyl-
inder *a*, and is thus prevented from passing
out with the cobs, which would not be the case
if the perforations in cylinder *b* were not larger
than those in cylinder *a*. The corn is then
screened through the holes in the outer cylin-
der, which holes are small enough to allow the
grains of corn to pass through them, but not
the larger pieces of cobs, which are discharged
from the rear end of the machine by the con-
veyer F. Very small pieces of the cobs will
pass through the cylinder *a*, with the corn and
fall upon the shaking-shoe, which conveys them
to the separating-trunk D, where they are
subjected to the action of a strong draft of air
created by the fan in the case E. The corn
will thus have separated from it the pieces of

cob, dust, and other impurities, and it is discharged from the lower end of the separating-trunk, cleaned for the market.

If desired, we shall build the rotary separators with shafts through them, and secure the conveyers to the shafts; but we prefer, when using the machines for cleaning corn, to make them without these shafts for the reason above mentioned.

10 Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The herein-described separator, comprising an outer and an inner rotary perforated cylin-

der, the latter having an open end, and a conveyer, a vibrating shoe, a fan, and a fan-case, and suitable gearing mechanism, all constructed and adapted to operate substantially as set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

J. SILAS LEAS. [L. S.]
JOHN B. CORNWALL. [L. S.]

Witnesses:

W. E. JOLLES,
J. S. GILLMORE.